REMARKS

The Office Action of March 17, 2005 has been received and its contents carefully considered.

Claims 1 to 12 are all the claims pending in the application.

Claims 1-12 have been rejected under 35 U.S.C. § 103(a) as obvious over Tomiyasu et al in view of Chang et al.

Applicants submit that Tomiyasu et al and Chang et al do not disclose or suggest the subject matter of the present claims and, accordingly, request withdrawal of this rejection.

The present invention as set forth in claim 1 as amended above is directed to a magnetic recording medium having a nonmagnetic substrate on which is provided at least a soft magnetic under-film, an orientation control film that controls an orientation of a film directly above, a perpendicular magnetic recording film having an axis of easy magnetization oriented to be mainly perpendicular to the substrate, and a protective film, wherein the orientation control film is an alloy containing at least Cr and C, and wherein the film that is directly above is the perpendicular magnetic recording film and is in direct contact with the orientation control layer.

In other aspects, as set forth in dependent claims 9 and 10, the present invention is directed to a method of manufacturing the magnetic recording medium, and as set forth in dependent claims 11 and 12, the present invention is directed to a magnetic recording and reproduction apparatus that contains the magnetic recording medium.

The Examiner states that applicants have argued that the upper precoat layer taught by Tomiyasu et al cannot be considered to be an orientation control layer, because there is no teaching of an orientation control layer containing C in either Tomiyasu et al or Chang et al.

In response to this argument, the Examiner states that she is maintaining her position that Tomiyasu et al teach a Cr alloy layer containing carbon that corresponds to the claimed orientation control layer. The Examiner points out that the claims do not specify what layer is deposited directly on the orientation control layer.

In view of this comment by the Examiner, applicants have amended claim 1 to state that the film that is directly above is the perpendicular magnetic recording film which is in direct contact with the orientation control layer. In contrast, the precoat layer 22 on which the Examiner relies as being an orientation control film is not in contact with the magnetic layer 6 of Tomiyasu et al. Applicants submit that Tomiyasu et al do not disclose or suggest a Cr/C orientation control film that is direct contact with a perpendicular magnetic film.

The Examiner also asserts that applicants have argued that Tomiyasu et al teach a horizontal recording medium. In response to this argument, the Examiner directs applicants' attention to column 6, lines 49-50, where Tomiyasu et al disclose the use of a perpendicular recording layer.

Applicants note that applicants did not argue that Tomiyasu et al do not disclose a perpendicular magnetic recording medium. Instead, applicants pointed out that Tomiyasu et al do not disclose any example of a perpendicular recording medium.

Further, Tomiyasu et al do not disclose any example where a precoat layer 22, in fact, contains carbon. Accordingly, applicants submit that Tomiyasu et al do not disclose the combination recited in the present claims for a perpendicular magnetic recording medium, and that one of ordinary skill in the art would not have been led to this combination from the teachings of Tomiyasu et al since there is no specific guidance in Tomiyasu et al to combine the various teachings of Tomiyasu et al in this manner.

Further, with respect to claim 3, the Examiner argues that the recitation of 30-70 atomic %C in the CrC layer is obvious because one of ordinary skill in the art would have optimized the amount of C that is added to the CrC layer.

However, Tomiyasu et al specifically state, at column 4, lines 7-8, that the content of the element, such as C, is preferably suppressed to 10 atomic % or less. In view of this disclosure, applicants submit that one of ordinary skill in the art would have not been led to optimizing the amount of C to a range that was more than 10 atomic %, and that such an optimization would not have been obvious. The optimization that Tomiyasu et al suggest is an optimization at an amount of 10 atomic % or less.

In view of the above, applicants submit that Tomiyasu et al and Chang et al do not disclose or suggest.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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